



What's Happening at OSTP?

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July 1, 2003

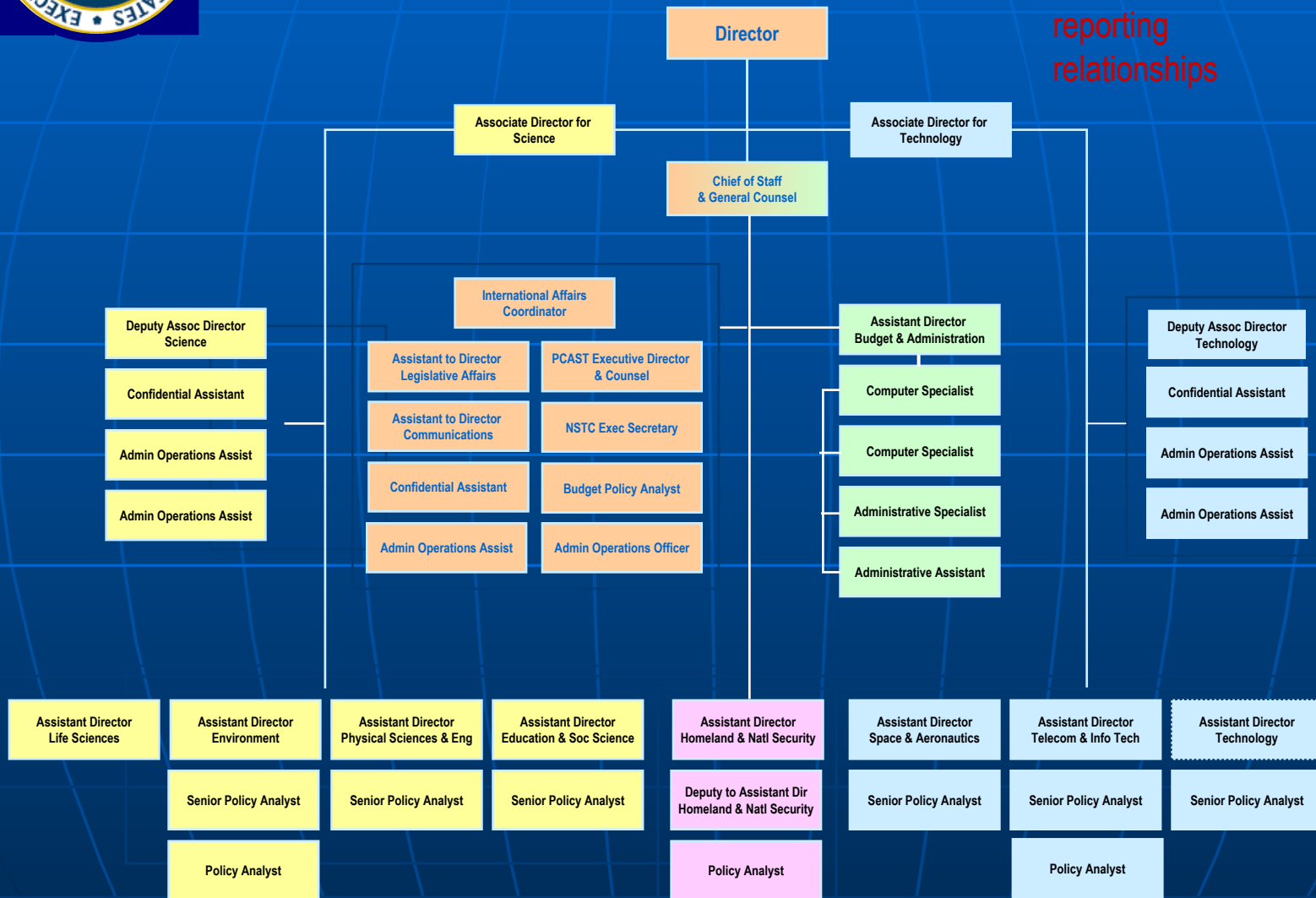


OSTP Mission

- 1. Advise the President** (and by implication, EOP.)
- 2. Lead interagency effort** to develop sound S&T policies & budgets.
- 3. Work with the private sector** to match S&T investments to needs.
- 4. Build strong partnerships** among Federal, State, and local governments, other countries, and the scientific community.
- 5. Evaluate** the scale, quality, and effectiveness of the Federal effort in science and technology.



OSTP Organization





Recent/Current OSTP Activities

- Bioterrorism & Select Agents Rule
- Sensitive Homeland Security Information
- Climate Change Research
- Ag-Bio Issues (GMOs, etc)
- Environment (mercury, dioxin, etc)
- Homeland/national security (DHS, etc)
- Columbia tragedy
- Scientific visas
- Telecom/IT
- Energy policy (nuclear, hydrogen fuel cell, fusion..)
- National Nanotechnology initiative



Physical Science Policy Topics

Lead

- Physical Science Budget
- ITER/Fusion
- Nuclear Power
- **Underground Laboratory**
- **High Energy Physics**
- **Astronomy/Astrophysics**
- **Physics of the Universe**
- **Scientific Facilities and Large Scale Science**
- **Research Business Models**
- **Neutron Scattering**

Participation

Education Workforce
Student Visas
Openness vs. Security
Technology Programs/Tech Transfer
IT R&D
Space Station
Yucca Mountain
Homeland/National Security
Nanotech (NNI)



Physical Sciences Group

Department/Agency	Department of Energy			NASA	National Science Foundation			Commerce	Smithsonian
Physical Science Discipline	Office of Science	Nuclear Programs	NNSA	Office of Space Science	Engineering	Mathematical and Physical Science	Polar Research	NIST	
Astronomy				X		X	X		X
Astrophysics	X			X		X			X
Biophysics						X		X	
Chemistry	X			X		X		X	X
Materials Science	X			X	X	X		X	
Mathematics						X			
Physics									
Atomic and Molecular				X		X		X	
Fusion and Plasma Physics	X		X	X		X			
High Energy and Elementary Physics	X			X		X	X		
Relativity				X		X			X
Condensed Matter (Solid State, etc.)	X					X		X	
Polymer Science	X				X	X		X	
Nuclear Engineering		X		X					
BUDGET	\$3B			\$4B		\$1 B		\$0.5B	

Astronomy and Astrophysics in the New Millennium

An Assessment of the Department of Energy's Office of Fusion Energy Sciences Program

Physics in a New Era An Overview

DOE's
HIGH-ENERGY PHYSICS
ADVISORY PANEL
SUBMITTAL ON
LONG-RANGE PLANNING FOR
U.S. HIGH-ENERGY PHYSICS

THE SCIENCE AHEAD THE WAY TO DISCOVERY

Particle Physics in the 21st Century

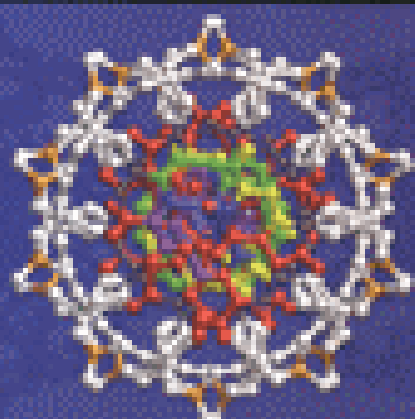
U.S. Astronomy and Astrophysics

MANAGING AN INTEGRATED PROGRAM

NATIONAL RESEARCH COUNCIL

Connecting marks Cosmos

Large Scale BIOMEDICAL SCIENCE



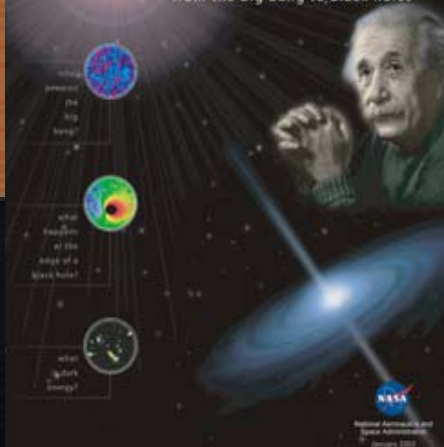
EXPLORING STRATEGIES FOR FUTURE RESEARCH

Research Teams and Partnerships: Trends in the Chemical Sciences

PROGRAM ON CHEMICAL SCIENCES

structure and evolution of the universe roadmap

BEYOND EINSTEIN: from the big bang to black holes



OPPORTUNITIES IN NUCLEAR SCIENCE

A Long-Range Plan for the Next Decade

April 2001

The DOE's Nuclear Science Advisory Committee
U.S. Department of Energy • Office of Science • Division of Nuclear Physics
National Science Foundation • Division of Physics • Nuclear Science Division



Environmental Factors for Large Facilities and Large Scale Science

There is a changing environment for large scale science program investments:

- Traditional fields are proposing large number of facilities and asking for significant new \$.
- There is increasing competition from emerging fields.
- We have a large installed base of existing facilities - some may be under utilized, some may be redundant.
- Greater emphasis by administration on understanding what we are getting for our investment, minimize redundancy, maximize return on large existing investment base.



Some Rules of Engagement

- Tell us what you want to do, not what you want to build.
 - What is the big picture view?
 - Do you have a consensus view?
 - How does the investment 'fit in' to the larger picture?
 - Is it interesting or is it important?
 - Can you demonstrate coordination among agencies?
 - Have you considered how it fits in an international context?
- You probably cannot get all of what you want, it is best to develop options.
- How do we coordinate advice from FACA committees?



OSTP/OMB Priorities Memo

Some agencies operate *programs or facilities whose capabilities are important to the missions of other agencies*. Such programs and facilities will be given special consideration in budget preparations. Consistent with the President's Management Agenda, it is imperative that, where appropriate, federal R&D investments be managed as a portfolio of potentially interconnected activities to *optimize scientific discovery through interagency coordination of related research areas*. OSTP informs the budget process regarding the availability of instrumentation and facilities for S&T priorities and the need for coordination of related research programs based on information generated through the National Science and Technology Council (NSTC) and other interagency mechanisms.



OSTP/OMB Priorities Memo

The President's Council of Advisors on Science and Technology has urged increased investment in certain areas of physical science, citing opportunities for continued scientific discovery and the fact that such discoveries often drive advances in other areas of science. Budgetary proposals for these or any other area must be specific regarding how the programs will expand scientific frontiers in a manner consistent with stated agency missions and national goals and demonstrate coordination with similar programs in other agencies. The desire to achieve parity in funding levels among disciplines does not by itself suffice to justify funding increases.



OSTP/OMB Priorities Memo

- 1.) R&D for Homeland and National Security
- 2.) Nanotechnology
- 3.) Networking and Information Technology R&D
(includes scientific computing)
- 4.) Molecular-level understanding of life processes
 - plant genomics, animal genomics, etc.
- 5.) Environment and Energy
 - climate change
 - environmental observations
 - hydrogen R&D



Recent Policy Statement Re: HEP

...there is a need for a new emphasis on, and perhaps even a redefinition of, strategic planning in high energy physics.

- As a first principle of planning, machines and instrumentation must be subordinated to a broader view of the field.
- A second principle of strategic planning must be to acknowledge the impact of one area upon another...
- A third important component of a new approach to strategic planning is the international dimension.

from **Remarks given at FERMI Lab Users Meeting, June 3, 2003**



...it is clear to me that the fates of deep space astronomy and particle physics are strongly entwined. In the long run, the future of particle physics lies in space-based experiments, and its productivity will depend on having a model of nature that is complete enough to exploit cosmic phenomena as a guide to theory. Now is the time to begin preparing for the long run.

John H. Marburger, III

President's Science Advisor *and*

Director, Office of Science and Technology Policy

from **Remarks given at SLAC's 40th Anniversary Celebration**



NSTC IWG on The Physics of the Universe

Co-chairs: Anne Kinney, Joe Dehmer, Peter Rosen (Robin Staffin)

Participation:

NASA OSS

NSF (Astronomy, Physics, Office of Polar Programs),

DOE

High Energy and Nuclear Physics

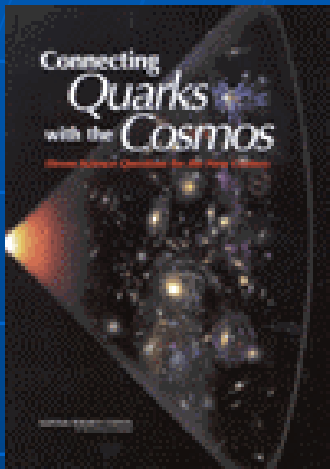
Fusion Energy Science

NNSA

OSTP, OMB



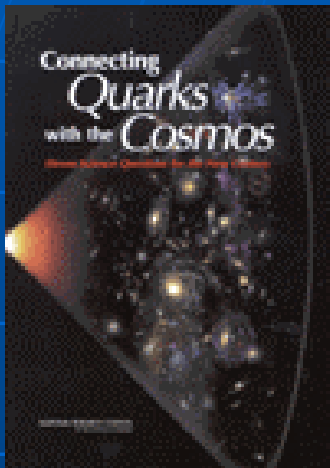
Quarks to the Cosmos Report



1. What is the Dark Matter?
2. What is Dark Energy?
3. How did the Universe Begin?
4. Did Einstein have the last word on gravity?
5. What are the masses of the neutrinos and how have they shaped our universe?
6. How do cosmic accelerators work and what are they accelerating?
7. Are protons unstable?
8. What are new states of matter at exceedingly high density and temperature? (HED)
9. Are there additional space-time dimensions?
10. How were elements from iron to uranium made?
11. Is a new theory of matter and light needed at the highest energies?



Response to Quarks to the Cosmos



- What are the approaches to answers?
 - What suite of tools are needed?
 - What are the highest priorities?
 - What are the “tall pole” policy issues?
-
- Define steward agencies for fields and tools.
 - Define who will do what and when (as best we can).
 - Bring items up for a decision in a timely manner.



POU and the President's Management Agenda

- R&D Investment Criteria
 - Relevance
 - Quality
 - Performance
- Prioritization
- Coordination of Investments



POU Investment Priorities: Process

- Develop inventory of current investments.
- Prioritize the 11 scientific questions using:
 - potential for scientific advancement
 - timeliness for the investment
 - technical readiness of projects
 - existence of gaps in current investments



POU: Prioritization of Recommendations

- Use questions prioritized in terms of investment priority.
- Sort or group questions into themes that are programmatically linked across agencies (e.g. dark matter, neutrinos, proton decay).
- Develop recommended actions for each theme area (across agencies)
- Assess programmatic readiness to proceed.
- Grouped into:
 - Directions known.
 - Roadmap/flesh out areas in more detail.

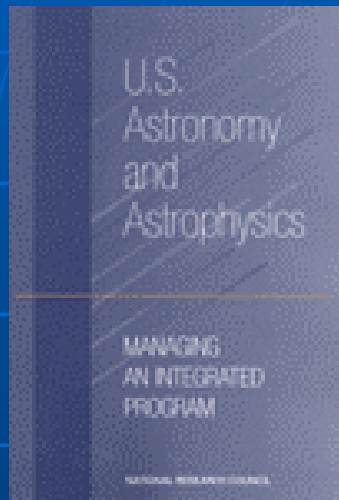


POU: Next Steps

- POU Group to Report to the NSTC Committee on Science on July 7.
- Clear the Report through the three Agencies.
- Should be available by PDF by end of ~ July.



COMRAA Report



“a new coordination and planning process is called for that should bring together all of the federal supporters of astronomy and astrophysics for the first time, the committee believes that the Office of Science and Technology Policy and the Office of Management and Budget are the proper government entities to supervise the establishment of such a process.”



HR 4664 and the NAAAC

SEC. 23. ASTRONOMY AND ASTROPHYSICS ADVISORY COMMITTEE.

- (a) **ESTABLISHMENT.**—The Foundation and the National Aeronautics and Space Administration shall jointly establish an Astronomy and Astrophysics Advisory Committee (in this section referred to as the “Advisory Committee”).
- (b) **DUTIES.**—The Advisory Committee shall—
 - (1) assess, and make recommendations regarding, the coordination of astronomy and astrophysics programs of the Foundation and the National Aeronautics and Space Administration;
 - (2) assess, and make recommendations regarding, the status of the activities of the Foundation and the National Aeronautics and Space Administration as they relate to the recommendations contained in the National Research Council’s 2001 report entitled “Astronomy and Astrophysics in the New Millennium”, and the recommendations contained in subsequent National Research Council reports of a similar nature;
- (f) **COORDINATION.**—The Advisory Committee shall coordinate with the advisory bodies of other Federal agencies, such as the Department of Energy, which may engage in related research activities.



NAAAC

- OSTP Selections for NAAAC
 - Rene Ong, UCLA
 - Angela Olinto, U. Chicago
 - Robert Kirshner, Harvard
- A Subcommittee of the NAAAC looks like a good candidate for the FACA committee for the Physics of the Universe



END